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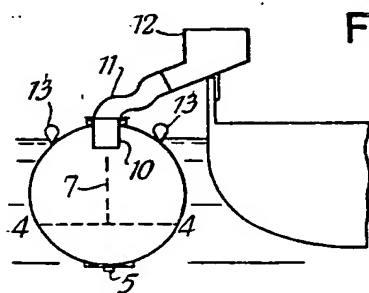
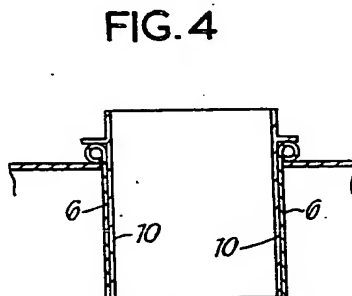
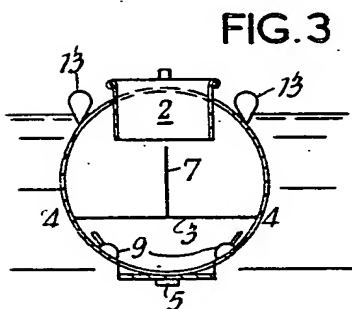
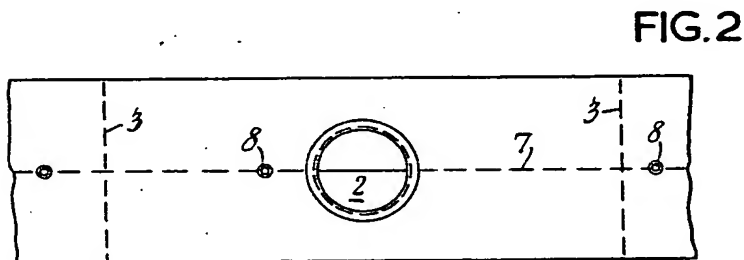
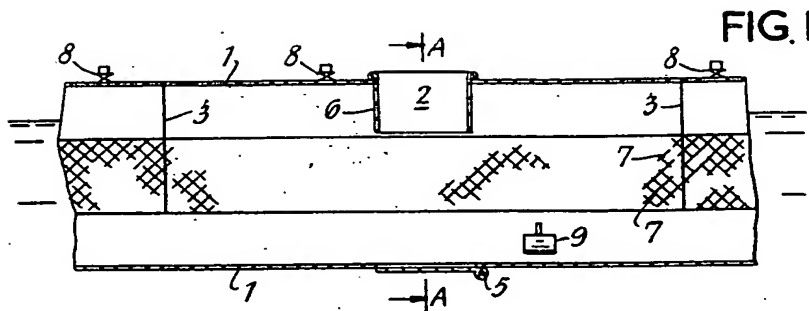
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PROVISIONAL SPECIFICATION

1 SHEET

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# PATENT SPECIFICATION

DRAWINGS ATTACHED

1.118.138

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GT. BRIT.  
DIV. 3

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## COMPLETE SPECIFICATION

### Flexible Barges

I, ASGEIR THORSTEINSSON, of Icelandic nationality, of P.O. Box 508, Reykjavik, Iceland, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a flexible barge suitable for the transport and/or storage of solids, such as fish, suspended in sea water.

According to the present invention, there is provided a flexible barge suitable for the transport and/or storage of solids suspended in sea water, comprising a longitudinally extending collapsible container formed of flexible material and having valve means located in the bottom portion of said container for allowing sea water to pass into or out of the container, means for enabling the upper portion of said container to be inflated with air so as to increase the buoyancy thereof when in use, and an entrance in the upper portion of the container through which the same may be loaded in use, the entrance having a neck extending into the container a distance such that in use the bottom portion of the neck is below the level of the sea water in the container, thereby preventing the escape of air from the upper portion of the container.

Flexible barges in accordance with the invention are suitable for use as floating barges for transporting fish cargoes received from fishing vessels at sea, the barges being fitted with a towing means whereby they can be towed by such vessels.

The flexible barge receives its cargo through the entrance in the upper portion of the container, the entrance preferably being about half way along the length of the barge. In the case of a barge having the entrance about half way along its length, folding of the container from both ends, before loading it onboard a fishing vessel, allows access to the middle section without initially unfolding the container to its full length.

In use, the container can receive a firm end portion of a flexible intake chute, the firm end portion being in the form of a short tube formed from, for example, stainless steel or a hard plastics material, such as glass fibre, and being adapted to fit tightly into the neck of the entrance of the container. The entrance of the container is generally from 10 to 15 inches wide, and the airtight neck can be attached to a flexible ring surrounding the entrance. After being carried by a fishing vessel to the fishing area the barge can be lowered into the sea alongside the fishing vessel. The lowering operation can be carried out by the derrick mechanism of the fishing vessel, which also hauls up fish, such as herring, from a seining-net alongside the vessel and drops it onto the deck or into the fish-hold.

Before commencing the loading of the barge with fish, the barge is filled with sea water to approximately the level of the sea on the outside by opening a valve or valves located in the bottom portion of the barge and simultaneously inflating the container through valves in the top portion, by an air pipe from the fishing vessel. During the filling of the barge with sea water the lower end of the airtight neck becomes submerged and, if made of soft material, pressed against the firm end of the flexible intake chute which forms a sleeve inside the neck and is conveniently fitted in the entrance before the barge is lowered from the deck of the vessel.

The valve means located in the bottom portion of the container for allowing sea water to pass into and out of the container is preferably adapted to be automatically maintained in a closed position unless opened by air under pressure from a source separated from the barge.

The loading of the flexible barge, lying alongside the vessel on the opposite side of the seining-net, can be carried out by swinging the derrick across the deck of the vessel and dropping the hauled-up fish into the mouth

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of the intake chute fitted on the bulwark of the vessel, the other end of the intake chute being fitted in the neck of the entrance. By means of this arrangement, the motions of the derrick and the mouth of the chute are independent of the motion of the floating barge.

A preferred barge of the invention has one or more air-inflatable floats attached to the outside of the container in a position such as to be in the vicinity of the level, in normal use, of the sea water outside the container.

For a better understanding of the invention and to show how the same may be carried into effect, reference will now be made, by way of example, to the drawing accompanying the Provisional Specification, in which:—

Figure 1 shows a diagrammatic vertical sectional view of the middle section of a flexible barge,

Figure 2 is a diagrammatic plan sectional view of the barge section shown in Figure 1,

Figure 3 is a cross-section along the line A—A of Figure 1,

Figure 4 is a diagrammatic side sectional view of the firm end of the loading chute positioned in the neck of the barge shown in Figure 1, and

Figure 5 is a cross-sectional view of a barge and the loading arrangement therefor from an adjacent fishing vessel.

Referring now to the drawing accompanying the Provisional Specification, the barge comprises a container 1 having in the top thereof an entrance 2, from which a neck 6 extends into the container. Transverse partitions 3 are provided in the container to divide the same into a plurality of compartments. The partitions 3 are truncated at the bottom thereof so as to leave a non-compartmented bottom portion of the container whereby the compartments are interconnected. The position of the bottom of the transverse partition is indicated by the line 4—4 in Figure 3 and is at a distance of not less than 20 inches from the bottom of the container which is provided with a discharge port closed by the openable closure member 5. The purpose of the truncation of the transverse partitions is to allow a cargo of fish which is dropped into the barge to spread quickly and evenly to both sides of the discharge port closed by the member 5.

In addition to the partitions 3 forming the above-mentioned compartments, there is provided in the container a longitudinal centrally disposed network partition 7 which keeps fish from rolling from one side of the barge to the other. This network partition 7, however, does not extend into the non-compartmented bottom portion, nor does it extend to the top of the container, at least in the part near the entrance thereof, in order to allow a flexible hose (not shown) to be inserted through the entrance 2 and to reach the bottom of the barge for the purpose of discharge of fish and

water by means of a suction pump mechanism (not shown).

The neck 6 is adapted to permit a firm end 10 of a flexible chute to be placed inside it, so that the firm end and the neck then extend below the normal surface of water in the barge to prevent air introduced through valves 8 from escaping from the top portion of the container through the entrance 2.

Located in the bottom of the container 1 are valves 9, by means of which the barge can be flooded before loading the same with fish. The valves 9 are kept open by air supplied under pressure from a separate air-line from the ship. On releasing the pressure the valves are automatically closed by a spring mechanism. The open position of valves 9 is maintained during loading so that water displaced by intake fish can escape through said valves to keep the surface level in the barge constant and substantially equal to that of the sea water outside. During storage and transport the valves are closed so as to allow the water in the barge to be disinfected by the addition of suitable agents such as formaldehyde and nitrate, which prevent putrefication of the fish cargo.

The position of the barge in relation to a fishing vessel during the loading of the barge is shown schematically in Figure 5. The firm end 10 of a flexible chute 11 is in position in the neck 6 of the barge and the intake mouth of the chute 11 is connected to an open box 12 positioned on a bulwark of the vessel. When fish are poured into the open box from the deck of the ship or from a seining net (not shown) on the side of the vessel opposite to the barge it may burden the barge too heavily under the entrance, so that it is desirable to counteract at least partially the burden of the loaded fish by employing floats 13 attached to the outside of the container in the vicinity of the normal level of the sea water outside the loaded barge, which floats 13 assist in maintaining the desired level of the barge in the water and the upright position of the barge while the fish spread out evenly over the bottom of the barge. These floats 13 are placed at the level of the sea surface on the outside of the container at longitudinally spaced positions thereon as found sufficient. The floats are closely connected to the container 1, in order that the buoyancy action thereof can work immediately to meet the increasing burden of loaded fish and gradually increase in lifting power as the burden from the loaded fish increases in weight.

These floats are usually inflated with air just before the barge is launched into the sea and are usually kept inflated during storage and transport in order to steady the barge against any excessive beam-rolling action caused by the sea and to avoid the consequent risk of capsizing.

After the barge has been loaded and prior to the barge being taken in tow, the flexible chute 11 is disconnected from the box 12, duly plugged or otherwise closed (not necessarily in an airtight manner) and dropped into the sea.

5 WHAT I CLAIM IS:—

1. A flexible barge suitable for the transport and/or storage of solids suspended in sea water, comprising a longitudinally extending collapsible container formed of flexible material and having valve means located in the bottom portion of said container for allowing sea water to pass into or out of the container, means for enabling the upper portion of said container to be inflated with air so as to increase the buoyancy thereof when in use, and an entrance in the upper portion of the container through which the same may be loaded in use, the entrance having a neck extending into the container a distance such that in use the bottom portion of the neck is below the level of the sea water in the container, thereby preventing the escape of air from the upper portion of the container.

25 2. A flexible barge as claimed in Claim 1, wherein the valve means is adapted to be automatically maintained in a closed position unless opened by air under pressure from a source separate from the barge.

30 3. A flexible barge as claimed in Claim 1 or 2, wherein the neck is adapted to receive in use a firm end of a flexible chute used in loading the container.

35 4. A flexible barge as claimed in any preceding claim, wherein the entrance in the upper portion of the container is situated about half way along the length of the barge.

5. A flexible barge as claimed in any preced-

ing claim, wherein the container is provided with at least one transverse partition, thereby splitting the container into two or more compartments, the or each partition being truncated at its bottom so as to leave a non-compartmented bottom portion within the container. 40

6. A flexible barge as claimed in any preceding claim, wherein the container is provided with a longitudinal centrally disposed network partition which does not extend to the bottom of the container but which may extend to the top of the container in parts other than the part near the entrance in the upper portion of the container. 45 50

7. A flexible barge as claimed in any preceding claim and further comprising one or more air-inflatable floats, the or each float being attached to the outside of the container in a position such as to be in the vicinity of the level, in normal use, of the sea water outside the container. 55

8. A flexible barge as claimed in any preceding claim, wherein the container is provided with an openable discharge port located in the bottom portion of the container. 60

9. A flexible barge as claimed in any preceding claim and further comprising towing means whereby the barge can be towed by a vessel. 65

10. A flexible barge substantially as hereinbefore described with reference to, and as shown in, the drawing accompanying the Provisional Specification. 70

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